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# An Output-Oriented Approach to the Impact of Online Written Languaging on Form-Focused Writing Tasks

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## ABSTRACT

**Background.** Despite the growing interest of second language acquisition (SLA) researchers in the languaging process, a few studies have been done on its dynamic attributes in various writing tasks.

**Purpose.** This study investigated how online written languaging (WL) might impact English-as-a-Foreign-Language (EFL) learners' performance on form-focused writing tasks with production-based and comprehension-based output orientation in Google Docs, and how the output orientation of form-focused writing tasks could determine the WL attributes of quantity and focus.

**Method.** To do so, 112 Iranian EFL university students were selected and assigned to four parallel groups. In an eight-week experiment, two groups worked on gap-filling tasks (production-based) and two groups on error-identification tasks (comprehension-based) in parallel ±WL conditions.

**Results.** Statistical analysis indicated a significant interaction between task output orientation and WL production. So, on both production-based and comprehension-based tasks, the +WL groups outperformed the -WL groups. Moreover, in the +WL condition, the task output orientation determined the quantity of WL episodes, but not their focus on grammar (G-WL) and lexis (L-WL) in production-based and comprehension-based tasks. As such, the +WL group who completed the production-based tasks produced much more WL episodes than the +WL group who completed the comprehension-based tasks. Yet, both groups equally produced more L-WL episodes than G-WL episodes.

**Conclusion.** The study had several implications for language teachers to maximize learning opportunities by teaching *how to language* in various writing tasks on online platforms. The L2 teachers are also recommended to adopt an alternative approach to translation as a form-focused writing task.

## KEYWORDS

comprehension-based, google docs, output orientation, production-based, written languaging

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## INTRODUCTION

Grounded in Vygotsky's sociocultural theory of mind (SCT, 1987), languaging is conceptualized as "an action – a dynamic, never-ending process of using language to make meaning" (Swain, 2006, p. 96). Underpinning the Comprehensible Output Hypothesis, Swain (2006) paralleled the languaging output with metalinguistic output, by stating that both might function as the "tools of the mind, mediating the cognition and recognition of experience and knowledge" (p. 106).

It has been argued that L2 learners' languaging can facilitate second/foreign language (L2) learning when they are working on form-focused writing tasks (Behbahani et al., 2011; Nguyen, 2020; Pourdana et al., 2011; 2021; Swain, 2006). To reciprocate, the form-focused writing tasks can substantially induce languaging episodes which are deemed to enhance the depth of processing in writing (Pourdana, 2022) and mediate the feedback uptake (Bataineh et al., 2017; Ellis, 2001; Jang et al., 2020; Nour et al., 2021). By the same token, Suzuki and Itagaki (2009) speculated that the attributes of

written languaging episodes are highly task-dependent. In other words, the quality and quantity of WL episodes can notably change while L2 learners perform different types of writing tasks with comprehension-based (e.g., error-recognition) and/or production-based (e.g., gap-filling) output orientation (Keshanchi et al., 2022).

Despite the growing interest of second language acquisition (SLA) researchers in the constructive role of languaging in L2 learning, they have more focused on the attributes of oral languaging (Ammar & Hassan, 2018; Azkarai & Kopinska, 2020; Heidari et al., 2019; Lavasani et al., 2021) with less interest in languaging in written modality (Yilmaz, 2016). Moreover, SLA researchers narrowed their scope to study the languaging production on content-focused writing tasks such as picture description or data commentary (Kazemi et al., 2022; Falhasiri, 2021; Pourdana & Asghari, 2021), with minimal attention to form-focused writing tasks such as translation (Keshanchi et al., 2022). Similarly, adopting an output-oriented approach to WL on production-based tasks or comprehension-based tasks has been the subject of scrutiny in only a few studies (Pourdana et al., 2012; Storch, 2013; Suzuki & Itagaki, 2009; Zhang, 2021), with scant attempts to cross-examine the impact of WL on writing tasks performance with production-based and comprehension-based output orientation. Such interdependency among the WL attributes and the output orientation of the L2 writing tasks is the untaken road that the current study has pursued.

## LITERATURE REVIEW

### Languaging in Theory and Practice

The notion of *languaging* was initially developed by Swain in 2006. Subsequently, languaging and its self-explaining effect have widely been examined in various non-linguistic fields of science (e.g., Chi, 2000; Karpov, 2013). In Vygotsky's SCT framework, human cognition is optimally constructed by the language function as a semiotic device. Accordingly, L2 learners can shape and sharpen their thoughts as they talk with themselves (i.e., self-languaging) or with others (i.e., peer/pair languaging) (Lantolf et al., 2015), or in collaborative dialogues (Rafi & Pourdana, 2023). Recently, SLA researchers incorporated the languaging process as a platform for studying various aspects of L2 development (Falhasiri, 2021; Manchón et al., 2020). It has been argued that languaging enhances the memory span of L2 learners in performing cognitively complex tasks (Esfandiari & Noor, 2018), and pushes their attention to the work-in-progress (Suzuki & Storch, 2020).

Languaging is not always confined to the oral mode. Written languaging (hereafter, WL) was introduced by Suzuki (2009) and claimed as an "equivalent of private speech, but in writing" (p. 4). He further acknowledged three important advantages of WL over oral languaging, in terms of (1) serving the L2 learners with extra time to process the target language form, (2) freeing them from immediate language processing, and (3) offering them an extra memory space (Suzuki, 2017).

Several studies on WL have focused on the association of WL and L2 learner proficiency (Ishikawa, 2018), written corrective feedback (WCF, Nicolás-Conesa et al., 2019), face-to-face vs. computer-mediated modalities (CMC) (Shekary & Tahririan, 2006), and task types (Suzuki & Itagaki, 2009). In an experimental study, for instance, Ishikawa (2018) examined the impact of WL production on 83 Japanese EFL learners' grammar achievement. She assigned them to four groups at higher/lower proficiency levels to complete one of the fill-in-the-blank production or multiple-choice recognition grammar tasks with and without generating WL episodes. Ishikawa (2018) concluded that only the +WL groups who completed the production grammar tasks had significant improvement in learning grammatical structures. Moreover, the +WL group at the lower level benefitted more from producing WL episodes than the higher-level group. Her findings supported the impact of producing WL on L2 grammar learning.

On the same track, in a pretest-posttest experimental study, Nicolás–Conesa et al. (2019) examined the complex interaction among the type of WCF (direct vs. indirect), type of committed errors (grammatical vs. non-grammatical), and the WCF perspective (accuracy vs. acquisition). The researchers recruited 46 Spanish EFL university students and assigned them to two experimental groups that were required to produce WL episodes after they received direct and indirect WCF and a control group that produced WL and revised their written assignment without receiving WCF. They concluded that (1) both direct/indirect WCF groups equally corrected more errors than the control group, (2) the direct WCF group outperformed the indirect WCF group in revising grammatical and non-grammatical errors, and (3) all experimental and control groups reduced the percentage of committed errors from the pretest to the posttest. The authors emphasized the positive and integrated impacts of WCF and WL on L2 writing improvement. In another study, Shekary and Tahririan (2006) required a group of 16 Iranian EFL learners at mixed language proficiency levels to complete a dictogloss, a jigsaw, and a collaborative writing task in a chatroom environment. The researchers attributed the students' large number of WL episodes, successful resolution of errors, and in-depth engagement in the text-based medium of collaboration to the hybrid nature of the CMC environment which enhanced the process of noticing in L2 learners. Finally, Suzuki and Itagaki (2009) promoted languaging as a task-induced verbalization that actively engages L2 learners in the production of the target language. They examined 114 Japanese EFL learners who were required to produce WL while they were completing one of the two comprehension

and production tasks of translation. By analyzing the WL episodes and students' task outcomes, the authors reported the mediating role of WL and a significant interaction between the task types and the participants' level of language proficiency.

To sum up, SLA researchers have lately shown a growing interest in the constructive role of WL in L2 learning improvement. Accordingly, they have promoted the mediating role of WL and a significant interaction between the WL and L2 language proficiency, corrective feedback, communication modality, and task types.

## Output Orientation in Form-Focused Writing Tasks

To emphasize the role of language output as a socially-constructed cognitive tool, Swain (1985) proposed her Comprehensible Output Hypothesis and argued that producing target forms can serve as "a trigger that forces the learner to pay attention to the means of expression to successfully convey his or her intended meaning" (p. 249), and "the act of producing language constituents, under certain circumstances, as part of the focusing process in language learning" (2005, p. 471). Swain (1995) moved forward with three major functions of language output in L2 learning, namely, noticing, hypothesis testing, and metalinguistic reflection. While producing language output, L2 learners notice the gap in their interlanguage and try to amend it (Pourdana & Rad, 2017). They also attempt to generate the L2 forms as hypothetically accurate statements which can raise their focus on form (Schmidt, 2001; Wang, 2019). Moreover, language output engages them in metalinguistic reflections to negotiate the meaning and the form.

Language output plays a more critical role in performing form-focused tasks. In form-focused tasks, L2 learners are required to (1) notice the form-meaning mapping in the L2, (2) integrate the language processing into producing the L2 form, and (3) juxtapose their interlanguage forms with the target language model (Izumi & Bigelow, 2000).

### *Translation as a Form-Focused Writing Task*

A controversial form-focused pedagogical task, translation seems indispensable in most bilingual educational contexts (Cerezo *et al*., 2019). A translation task is known as a type of content-controlled writing task (Ishikawa, 2018) that intensely demands the L2 learners to focus on the linguistic aspects of their writing output more than the content of the message they convey (Nord, 2005; Pym, 2003).

Translation tasks have been recommended by several SLA researchers (e.g., Canagarajah, 2013; Moradian et al., 2017; Pennycook, 2008) in L2 learning environments where the teachers and students share the same L1. In 2005, Nord introduced the functional model of translation and argued that contrastive analysis of the structural similarities and differences between the source language and the target language can become a source of metalinguistic awareness which improves task engagement and L2 learning. In other words, the L2 learners' mother tongue can play the critical role of a metacognitive mediator (Pourdana et al., 2014) and a regulating device, because the "utterances in L1 mediate the cognitive processes that L2 learners need in general problem-solving tasks" such as translation (Antón & DiCamilla, 1999, p. 238).

By adopting Nord's functional approach, SLA researchers responded to the L2 practitioners' growing interest in translation tasks while recommending the translation of "carefully selected, authentic texts with a clear context and purpose" (Károly, 2014, p. 90). As a result, the dynamic code-switching strategies in translation tasks can have the potential to draw the L2 learners' focus on form, make a decision, foster self and collective scaffolding, and externalize their metatalk through languaging (Kazemi et al., 2022; Keshanchi et al., 2022; Rodrick Beiler & Dewilde, 2020).

## Computed-Mediated Written Languaging

Computer-mediated communication (CMC) advanced technologies have changed the face of education by creating a learner-centered environment that eliminates the apprehension, embarrassment, and stress that students usually feel when participating in real classroom discussions (Pourdana, 2022; Pourdana & Tavassoli, 2022; Rafi et al., 2022). The CMC can serve L2 learners with a platform to share comments, generate content, and exchange feedback with peers and teachers, either synchronously or asynchronously (Abe, 2020). Moreover, the CMC can offer multimedia modalities in e-learning contexts in terms of downloadable texts and audio/video files.

Faster than expected, e-learning has turned into a reality in developing countries despite serious challenges of outdated infrastructure, the digital divide, teachers' low expertise, and learners' inadequate computer literacy (Engerer, 2020; Lin, 2020). The situation became even worse with the COVID-19 pandemic crisis which pushed many students to distance education. In this adverse situation, some user-friendly CMC interfaces such as Google Docs have reached a peak in popularity.

A CMC Web 2.0-word processor, Google Docs is an interactive online context that allows L2 learners to generate, edit and share their Word processing documents. The potential of Google Docs includes being associated with other Google tools such as Google Translate and Google Sheets, browsing document folders in Google Drive, managing documents by

sharing them, and free-of-charge accessibility (Ebadi & Rahimi, 2017; Yamashita, 2021).

In the research literature on languaging, Kazemi et al. (2022) are among the few who focused on computer-mediated languaging in L2 writing tasks. To compare the impacts of collaborative writing and mediation modalities in determining the WL attributes in Google Docs, the researchers selected 68 EFL learners. The participants were paired and divided into two advanced groups who collaborated on form-focused and content-focused writing tasks while simultaneously producing WL episodes. Both groups received teacher-made and automated mediation by Google Docs on their task performance. The findings indicated that the group that worked on the form-focused writing task generated more WL episodes than the other, while both groups focused more on lexis than grammar. The researchers also promoted the role of Google Docs' automated mediation in causing a more successful resolution of WL episodes than teacher-led mediation.

## The Current Study

The languaging literature lacks enough research on the interaction between the attributes of WL episodes and the output orientation of the online writing tasks. This study addressed this large gap by examining (1) the extent to which the online production of WL episodes and the output orientation of the form-focused writing tasks (i.e., production-based vs. comprehension-based) might interact to facilitate the EFL learners' writing improvement, and (2) the extent to which the attributes of WL episodes (i.e., quantity and focus) might be determined by the output orientation of writing tasks.

This study was led by the following research questions:

(1) Is there any potential interaction between producing WL episodes and the output orientation of the form-focused writing tasks to affect the EFL learners' task outcomes?

(2) How does the output orientation of the form-focused writing tasks affect the attributes of WL episodes in terms of quantity and focus?

# METHOD

## Context and Participants

This research was conducted in the middle of the COVID-19 pandemic in Iran. A group of 130 university students majoring in English Translation Studies volunteered to partake in this experiment. They were Persian-speaking (L1) EFL learners whose ages ranged from 20 to 25 ($M$ = 22.08, $SD$ = .31) and the length of their formal exposure to English was 12 years on average.

The participants received bilingual instructions in English and Persian in mandatory university courses such as academic writing, translation of journalistic texts, and oral interpretation. The researcher's criteria for participation in the research included signing a consent form, owning a smartphone, accessing the Internet, and registering with Google Docs. Also, participants were required not to use dictionaries to complete the assigned tasks.

The experiment was announced as an extra-curricular university program which received a huge response from the volunteers at the university campus. The convenience sampling method (Best & Kahn, 2006) was used to select the participants who were available and willing to participate ($N$ = 112, 100 females, 89.28%, and 12 males, 10.71%). To control the confounding effect of the participants' English proficiency level on the quantity of WL episodes (Ishikawa & Suzuki, 2016), it was planned to select a uniform sample of students at the advanced level of general English. To do so, the Oxford Placement Test (OPT, Version 1.1, 2001) was administered. Due to the restrictions imposed by the COVID-19 lockdown, the 60 items of the test were converted into online Google Forms.

The volunteers whose proficiency level was determined as advanced by their OPT scores were selected (48-54, C1 on OPT rating scale) ($M$ = 52.00, $SD$ = .601, Cronbach's α = .860, representing strong inter-item reliability). Next to administrating the OPT and excluding 18 volunteers whose scores were below the threshold, the 112 remaining participants were randomly assigned to two groups who worked on production-based tasks with and without producing WL (hereafter, +WLPT and -WLPT) and two groups who worked on comprehension-based tasks with and without producing WL (hereafter, +WLCT and -WLCT). After assigning the participants to their respective groups, the OPT mean scores of the four groups were compared and no significant inter-group differences were found ($F$ (3, 109) = 1.39, $p$ = .79; Partial $\eta^2$ = .006, interpreted as a weak effect size).

## Assessments and Measures

### *Assessment Tasks*

Three translation tasks were developed which functioned as the pretest, a production-based posttest, and a comprehension-based posttest. The task content was paralleled by the situationally-relevant topic of COVID-19 to balance their cognitive loads. The pretest was a Persian-to-English translation of a descriptive passage prompted with a bar graph about the marriage rate in the last decade in Iran (counted words = 92, $M$ = 23 per sentence). The participants were

required to translate the passage in 30 minutes on Google Docs without using dictionaries.

The production-based posttest was a gap-filling translation task, and the comprehension-based posttest included an error-identification task of translation. The logic behind developing gap-filling and error-identification tasks was their efficiency in representing the contextualized form-focused writing tasks with comprehension-oriented and production-oriented outputs, respectively (Brown & Abeywickrama, 2018; Pica et al, 2006; Purpura, 2014).

The content of the posttests was adopted from a medical report on the susceptibility of ABO blood types to COVID-19 infection by ALKhikani (2020). The readability index of the adopted text was measured as 57.30 (i.e., fairly difficult to read) on the Flesch Reading Ease Scoring system. The pretest and the posttests were pilot-studied with a random group of 18 undergraduate students and co-rated by the researcher and her two research assistants (the inter-rater agreement being 95.40%). The responses were measured dichotomously (1 for a correct response, 0 for an incorrect response). Grammatical accuracy was the only standard for the correctness of the responses to the pretest and posttests.

### *Treatment Tasks*

Eight authentic Persian texts were extracted from www.mehrnews.com, an official news network headquartered in Tehran, Iran. They were incorporated into eight parallel tasks of gap-filling (production-based) and error-identification (comprehension-based) as the treatment tasks in this study. The topics such as marriage, unemployment, national festivities, COVID-19, and Persian arts were selected with a 95.08% familiarity index after a topic familiarity questionnaire was administered to the participants. The treatment tasks were piloted with a total of 49 undergraduate students similar to the main sample of participants.

The error-identification tasks consisted of a translated passage with some selected grammatical (e.g., verb tense, preposition) ($N$ = 6), and lexical choices (e.g., adverb of manner, adjective) ($N$ = 6). The choices were numbered and the participants had to decide on their grammatical accuracy. For example, the initial sentence in the error identification task # 5 was:

> *This picture ¹ reports that the ABO blood types plays ² roles in susceptibility ³ to COVID-19.*

| | | |
|---|---|---|
| *¹ Correct/Incorrect* | *² Correct/Incorrect* | *³ Correct/Incorrect* |

in which the participants had to highlight one of the correct/incorrect options for each item on Google Docs. Only the +WLCT group had to complete the task while producing WL episodes. The WL episodes could be written on the left or right margin of the text layout (Appendix A). The selected responses were scored collaboratively by the researcher and her assistants (Cronbach's $\alpha$ = .982, representing strong inter-item reliability).

The parallel gap-filling tasks were spotted with 12 blanks that corresponded to similar items in the error identification tasks. The six grammatical and six lexical missing words were numbered and the participants were required to fill all the gaps on Google Docs. While the +WLPT group was producing WL episodes and completing the gap-filling task, the –WLPT group had to work on the task without languaging. The first sentence in the gap-filling task # 5 was:

> *This .....[1] reports that the ABO blood types .....[2] roles in .....[3] to COVID-19.*

In rating the produced responses to the gap-filling task, the appropriate-word scoring method was adopted to give credit to a wider range of responses that fitted the blanks (Greene, 2001). The misspellings and typographies were not penalized unless they were illegible ($N$ = 4). The written responses were also co-rated by the researcher and her assistants (Cronbach's $\alpha$ = .982, representing strong inter-rater agreement) (Appendix B). The disagreements in the rating procedure were resolved case-wise reaching a full consensus.

## Procedure

Informed by Kim and McDonough (2011) who provided evidence for the mediating role of the pretask modeling, the researcher believed that the tutorial was necessary for the participants who were unfamiliar with the notion of virtual WL production. Therefore, the study commenced with a 90-minute webinar on *Virtual Written Languaging on Google Docs* in Week 1. Upon the announcement in June 2020, 130 volunteers signed up for the Zoom video conferencing platform and used their Google email (Gmail) accounts to sign in to Google Docs.

In the Zoom meeting sessions, the researcher began to share the screen with the audience into a document file generated on Google Docs and live-streamed the virtual WL performance on various types of translation tasks. The instructions were also provided to the rating system. The participants were suggested to notice the automated error detection by Google Docs and try to apply the comments to resolve their errors. Through waved underlining, for example, Google Docs provided feedback on grammatical or lexical errors, misspellings, and abbreviated or non-English words (e.g., *Goole* for Google or *COVID*). Next to the researcher's tutorial, four volunteers screen-shared their WL production on translation tasks and received the audience's feedback.

After the OPT administration and grouping in Week 2, the participants completed the pretest in 30 minutes in the fol-

lowing week. For the next eight weeks (Weeks 4 to 11), the +WLCT and +WLPT groups completed treatment tasks while producing online WL episodes, and the –WLCT and –WLPT groups performed similar tasks without producing WL. All assignments were carried out on Google Docs. The online weekly sessions were 30 minutes long, in which samples of the participants' task outputs were rated by the researcher and discussed with the group. The participants in the +WLCT and +WLPT groups were frequently encouraged to produce WL episodes in English. Nonetheless, Persian WL episodes were accepted and encoded similarly to the English WL episodes. In Week 12, the WLCT groups completed a 30-minute error identification task, in parallel to the WLPT groups who completed a 30-minute gap-filling task on Google Docs. The whole procedure was illustrated in Figure 1.

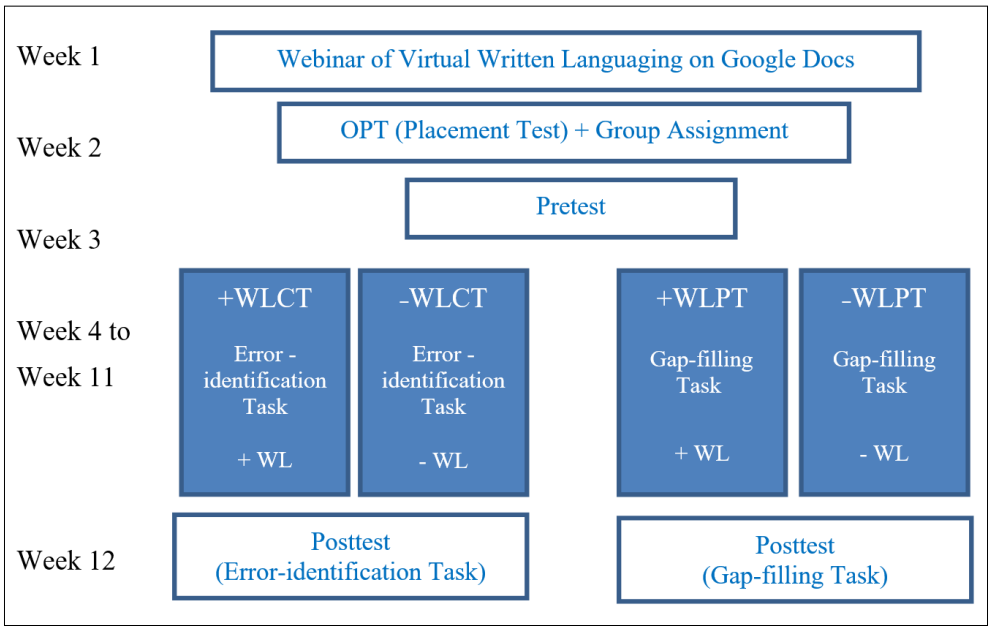
### *Data Analysis*

A quantitative scheme of translation assessment was adopted in this study in terms of measuring the correct response percentages on all the treatment tasks, pretest, and posttests. Accordingly, the error detection was limited to the percentages of committed errors on grammatical structures and lexical choices to maintain objectivity in data collection and reliability of the rating system.

Moreover, the participants' production of WL episodes by the +WLCT and +WLPT groups was analyzed in terms of the quantity and the focus of the WL episodes. To encode and quantify the WL episodes, Swain's operational definition of languaging was adopted as "any segment of a dialogue where students [self-]talk about the language they are producing, question their language use, or other- or self-correct their language production" (Swain, 2000, p. 287).

**Figure 1**

*The Flow of the Procedure*




Further, the WL episodes were analyzed for their type of focus by using the languaging classification in Yang (2016): (1) Grammar-based WL (G-WL), including the WL segments dealing with aspects of morphology or syntax, such as articles, tense, or subject-verb agreement; (2) Lexis-based WL (L-WL), including the WL segments dealing with lexical choices, or equivalents

## RESULTS

In a pretest-treatment-posttest design, this study addressed whether (1) producing online WL episodes and the output orientation of the translation tasks would compete to affect the EFL learners' task performance and whether (2) the output orientation of the translation tasks would determine the attributes of the WL episodes. The collected data to answer the first research question included the ±WLCT and ±WLPT groups' pretest and posttest scores, while the data for the second research question were collected through the content analysis of the WL episodes produced by only +WLPT and +WLCT groups.

### Impact of WL and Output Orientation on Task Outcomes

The pretest and posttest scores of the four groups were inserted into Statistical Package for Social Sciences (SPSS) version 25 for running the tests of normality and descriptive statistics. The level of significance was set at $\alpha$ = .05 for all tests (Table 1).

As Table 1 indicates, the ratios of skewness and kurtosis for all test results were inside the ± 1.96 intervals to retain

the normality of the data (Byrne, 2010). The descriptive statistical analysis of the pretest and the posttests is summarized in Table 2. Accordingly, the highest mean score on the posttest belonged to the +WLPT group ($M$ = 10.85, $SD$ = .80), followed by the +WLCT group ($M$ = 8.92, $SD$ = .81). The other two groups (–WLCT and –WLPT) also showed improvement on the posttests, yet their improvements were not as noticeable as in the +WL counterparts.

To move forward to the inferential statistics, an analysis of covariance (ANCOVA) was run with the mean scores of the four groups on the posttests, when the condition of ±WL (with and without producing WL) was set as the between-group variable (Table 3). The logic behind running the ANCOVA was to control the initial within-group differences in the participants of the four groups which were measured by the pretest (covariate).

The assumptions of ANCOVA were met in this study, including the homogeneity of variances for the groups (indicated by the ratios of skewness and kurtosis in Table 1), the non-significant interaction between the covariate and the dependent variable (i.e., the posttests scores) ($F$ (3, 104) = .780, $p$ = .010, Partial $\eta^2$ = .016, interpreting as a weak effect size), and the homogeneity of variances measured by Levene's Test of Equality of Variances ($F$ (3, 108) = .241, $p$ = .867).

According to Table 3, the test of ANCOVA produced the main effect of the ±WL condition which caused significant differences among the mean scores on the posttests ($F$ (3, 107) = 221.583, $p$ = .000, partial $\eta^2$ = .861, representing a large effect size), after controlling for the covariate effect of the pretest.

To further explore the between-group differences, a series of Sheffé post hoc tests were carried out to examine the extent to which the posttests gain scores were different across groups. The results reported significant differences, with the largest gap between +WLPT and –WLPT groups (Mean Difference = 5.28, $p$ < .005, 95% CI [4.69 – 5.78]), and the smallest gap between +WLCT and –WLCT (Mean Difference = 1.35, $p$ < .000, 95% CI [.76 – 1.94].

As Figure 2 illustrates, the +WLPT and +WLCT groups improved their writing performance noticeably from the pretest to the posttest (5.10 to 10.85, and 5.49 to 8.92, respectively). Regarding the –WL groups, while the –WLCT group

**Table 1**

*Normality of the Pretest and Posttest Scores (Four Groups)*

| | | | Skewness | | | Kurtosis | | |
|---|---|---|---|---|---|---|---|---|
| **Groups** | **Test** | **WL** | **Statistics** | **Std. Error** | **Ratio** | **Statistics** | **Std. Error** | **Ratio** |
| WLCT | Pre | + | -.693 | .441 | -1.57 | 1.261 | .858 | 1.46 |
| | Post | + | .581 | .441 | 1.31 | -.012 | .858 | .01 |
| WLPT | Pre | + | .482 | .441 | 1.09 | 1.101 | .858 | 1.28 |
| | Post | + | .273 | .441 | .61 | -.379 | .858 | -.44 |
| WLCT | Pre | - | -.121 | .441 | -.27 | 1.198 | .858 | 1.39 |
| | Post | - | -.610 | .441 | -.07 | .191 | .858 | .22 |
| WLPT | Pre | - | .377 | .441 | .85 | -.304 | .858 | -.35 |
| | Post | - | .560 | .441 | 1.26 | 1.196 | .858 | 1.39 |

**Table 2**

*Descriptive Statistics of the Test Scores*

| **Groups** | **Test** | **WL** | **Mean** | **Std. Deviation** | **95% CI** |
|---|---|---|---|---|---|
| WLCT | Pre | + | 5.49 | .17 | [5.42 – 5.55] |
| | Post | + | 8.92 | .81 | [8.61 – 9.24] |
| WLPT | Pre | + | 5.10 | .21 | [5.02 – 5.19] |
| | Post | + | 10.85 | .80 | [10.54 – 11.16] |
| WLCT | Pre | - | 5.67 | .14 | [5.62 – 5.73] |
| | Post | - | 7.57 | .69 | [7.30 – 7.83] |
| WLPT | Pre | - | 5.49 | .21 | [5.41 – 5.57] |
| | Post | - | 5.77 | .79 | [5.26 – 5.87] |

**Table 3**

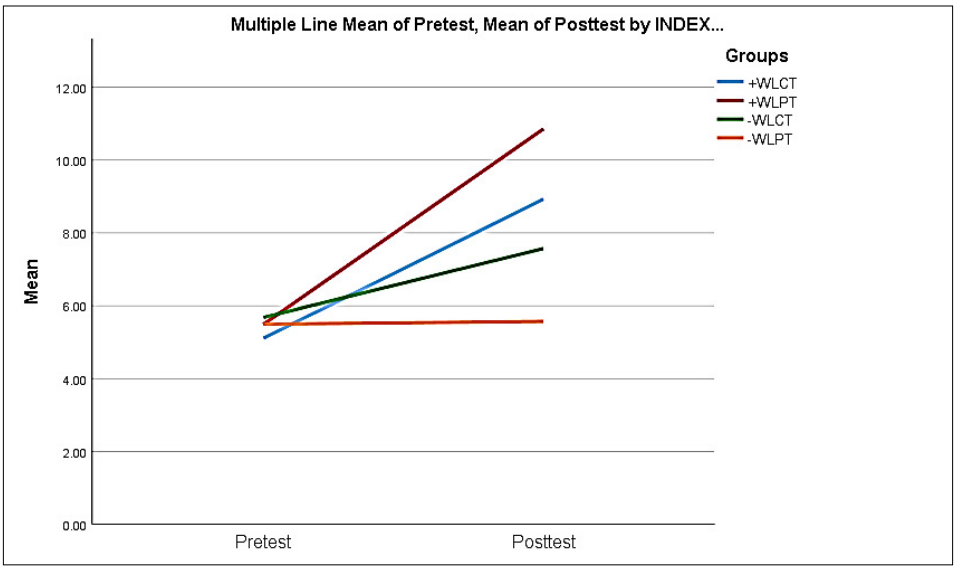
Tests of Between-Subjects Effects

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial $\eta^2$ |
|---|---|---|---|---|---|---|
| Corrected Model | 417.008[a] | 4 | 104.252 | 171.729 | .000 | .865 |
| Intercept | 7.714 | 1 | 7.714 | 12.708 | .001 | .106 |
| Pretest | .043 | 1 | .043 | .071 | .790 | .001 |
| Groups | 403.550 | 3 | 134.517 | 221.583 | .000 | .861 |
| Error | 64.957 | 107 | .607 | | | |
| Total | 8072.000 | 112 | | | | |
| Corrected Total | 481.964 | 111 | | | | |

*Note: R Squared = .865 (Adjusted R Squared = .860)*

**Figure 2**

*Estimated Marginal Means*




had a moderate improvement, the performance of the –WLPT group showed a small progress from the pretest to the posttest (5.67 to 7.57 and 5.49 to 5.77, respectively).

## Impact of Output Orientation of the Tasks on WL Attributes

To address the second research question, the quantity of WL episodes and their focus on grammar (G-WL episodes) and lexis (L-WL episodes) produced by the +WLPT and +WLCT groups were summed up.

Every occurrence of the G-WL and L-WL episodes was treated as one test score. Accordingly, the total number of WL episodes produced by the +WLPT group ($N$ = 847) was more than doubled in size of the WL episodes produced by the +WLCT group ($N$ = 405). Moreover, in both +WLCT and +WLPT groups, the tallies of the L-WL episodes (501, 54.75% to 300, 72.28%) were much higher than those of the G-WL episodes (346, 45.25% to 115, 27.71%). The descriptive statistics for G-WL and L-WL episodes are presented in Table 4.

As Table 4 reports, the ratios of skewness and kurtosis were within the ± 1.96 intervals as the indication of normal distribution. Moreover, the average number of L-WL episodes produced by both +WLCT and +WLPT groups ($M$ = 10.71, $SD$ = 1.30, and $M$ = 17.89, $SD$ = 1.10, respectively) showed a larger distribution of L-WL episodes than G-WL episodes ($M$ = 4.10, $SD$ = 1.42, and $M$ = 12.35, $SD$ = 1.41, respectively) in both groups. To further explore the differential impacts of the output orientation of the treatment tasks on the focus of WL episodes, a one-way analysis of variance (ANOVA) was carried out (Table 5).

As Table 5 indicates, the main effect of the output orientation on the average number of G-WL and L-WL episodes was reported as significant ($F$ (3, 108) = 508.78, $p$ = .000, partial $\eta^2$ = .320, representing a large effect size). In other words, the difference between the proportions of G-WL and L-WL episodes on gap-filling and error identification tasks was determined by their output orientation.

**Table 4**

*Descriptive Statistics for G-WL and L-WL Episodes*

| | | | | Skewness | | | Kurtosis | | |
|---|---|---|---|---|---|---|---|---|---|
| **Group** | **WL** | **M** | **SD** | **Statistics** | **Std. Error** | **Ratio** | **Statistics** | **Std. Error** | **Ratio** |
| +WLCT | G-WL | 4.10 | 1.42 | -.285 | .441 | -.641 | -1.198 | .858 | -1.396 |
| | L-WL | 10.71 | 1.30 | -.379 | .441 | -.859 | 1.012 | .858 | 1.179 |
| +WLPT | G-WL | 12.35 | 1.41 | .377 | .441 | .854 | -.304 | .858 | -.354 |
| | L-WL | 17.89 | 1.10 | .046 | .441 | .104 | -.478 | .858 | -.557 |

**Table 5**

*Mean Comparison of WL Episodes*

| | **Sum of Squares** | **df** | **Mean Square** | **F** | **Sig.** | **Partial $\eta^2$** |
|---|---|---|---|---|---|---|
| Between Groups | 2706.464 | 3 | 902.155 | 508.787 | .000 | .320 |
| Within Groups | 191.500 | 108 | 1.773 | | | |
| ***Total*** | ***2897.964*** | ***111*** | | | | |

# DISCUSSION

The first research question in this study queried whether producing WL and the task output orientation would have any interface to affect the L2 learners' performance on form-focused writing tasks. The findings were affirmative and in favor of the impact of WL production. In other words, the L2 learners who produced WL had better performance on both production-based gap-filling tasks and comprehension-based error-identification tasks, than those whose task output was without WL production.

The discussion of the first research question is anchored in Vygotsky's SCT argument and cognitive psychology of the mind. In the SCT framework, the distance between the L2 learners' potential and actual level of development is bridged by employing collective scaffolding of the teacher (the expert) to the learner (the novice) (Vygotsky, 1987) or the learners' self-scaffolding (Swain et al., 2009). In other words, the social or private speech exchanged over the form-focused tasks might be internalized and turned into metacognitive (i.e, languaging) output (Storch, 2013). Therefore, engagement of the L2 learners in producing languaging can mediate them to deepen their knowledge of linguistic form and "relocate the scaffolding agency from the expert to the learners to provide occasions for successful learning" (Knouzi et al., 2010, p. 26).

Moreover, the ANCOVA statistical results indicated that the participants in +WL groups who produced responses to the gap-filling tasks outperformed those who selected the correct responses to the error identification tasks. From the cognitive psychology perspective, while the error identification task can challenge only the L2 learners' existing grammatical and lexical knowledge, the gap-filling task demands both their existing knowledge and their ability to produce correct responses (Purpura, 2014). Therefore, the production-based gap-filling tasks could trigger more WL episodes than the comprehension-based error identification tasks and eventually higher task achievement (Falhasiri, 2021; Van Patten, 2015a).

Several studies have echoed the mediating role of WL in L2 learners' outperformance on various types of tasks similar to the results of the study (Manchón et al., 2020; Pica et al., 2006; Storch, 2013; Suzuki & Itagaki, 2009; Swain et al., 2009). The findings in this study partially contradict Ishikawa (2013) who required 18 Japanese EFL learners to complete a Japanese-to-English translation task with/without languaging. In the face-to-face classroom setting, Ishikawa assigned the participants to the treatment and control groups. It was reported that the languaging participants produced more L-WL than G-WL, while no differences were observed between their posttest scores and those in the control group. Such unexpected results were arguably due to several possible reasons, such as the small size of participants in each group, and the non-experimental nature of the study.

The second research question addressed the potential impact of the output orientation of the form-focused writing tasks on the quantity and focus of the WL episodes. The results indicated that the output orientation of translation tasks could only determine the quantity of the WL episodes in favor of production-based gap-filling tasks. In other words, the L2 learners who performed production-based gap-filling tasks produced more WL than those who performed comprehension-based error-identification tasks. Yet both groups focused more on lexis (L-WL) than grammar (G-WL) while they were producing WL and performing writing tasks.

The discussion of the second question is two-fold. On one hand, the results are supported by the fundamental argument in Swain's Comprehensible Output Hypothesis which accounts for producing a larger body of WL episodes by L2 learners who are working on production-based tasks such as gap-filling (Benati, 2017; Swain, 2005). On the other hand, Swain anticipated that L2 learners would generate more grammar-focused than lexis-focused language output when they work on form-focused writing tasks which seemed contradictory to the findings in this study. Despite the soundness of this argument, the *languaging output* may not necessarily function as the *language output* which is the core subject matter in Swain's Output Hypothesis. In other words, the gap-filling tasks might still require the L2 learners' languaging over the lexical points (L-WL) more than grammatical points (G-WL).

Several SLA researchers compared the impacts of different task types on the amount of WL episodes (García Mayo, 2002; Niu, 2009) and supported the potential of the production-based tasks to induce a larger body of languaging episodes. The findings in this study are consistent with Suzuki (2012), but partially endorse Yang (2016). To examine the impact of receiving form-focused CF on learning English grammar, Suzuki (2012) examined 24 Japanese EFL learners who worked on a production-based writing task and received CF exclusively on their grammatical errors. The participants were required to produce WL on the received CF and revise their writings. Consistent with the findings in the current study, Suzuki reported a huge number of students' WL episodes as a result of working on form-focused production-based writing tasks and the mediating role of CF in their writing task achievement. On the other hand, Yang (2016) explored the role of WL to facilitate eight Chinese EFL learners' performance on a story re-writing task (i.e., a production-based oral task). The participants' engagement in languaging was later analyzed in terms of the rates of L-WL and G-WL episodes. Similar to the findings of the current study, Yang reported that when the participants engaged in the re-telling stage, they produced a large number of L-WL episodes. Yet, in the comparing and revising stages of the story re-writing task, they switched to generating more G-WL episodes.

The relative advantage of the groups whose task performance concurred with producing WL episodes (+WLCT and +WLPT groups) can be further discussed in light of the learner-centered and user-friendly potential of the Google Docs platform. As a web-based Word processor, Google Docs mediated all participants through the visual display of their writing task outputs. Therefore, it simultaneously provoked a large amount of WL episodes in the two +WL groups who could visualize their WL episodes as well. As a result, Google Docs could benefit the +WL groups with more opportunities to notice their linguistic errors, self-repair, and deliberate (Falhasiri, 2021; Kazemi et al., 2022; Yamashita, 2021).

# CONCLUSION

This study provided strong evidence for the interaction between the WL production and task output orientation and their potential to improve EFL learners' performance on form-focused writing tasks (i.e., translation). It was found that producing WL episodes could mediate the L2 learners' performance on both production-based and comprehension-based writing tasks. Moreover, the WL was provoked more rigorously by working on production-based than comprehension-based writing tasks, while the focus of WL episodes was more directed to lexis than grammar on both types of form-focused writing tasks.

In consequence, several pedagogical implications can be proposed. The L2 teachers are recommended to create opportunities for languaging by training the students how to language in oral and written modes. For more benefits, teacher-imposed languaging might be incorporated as an independent task rather than the by-products of a pedagogical task.

The L2 teachers are also recommended to adopt an alternative approach to translation as a constructive form-focused writing task. They can make the best use of translation as a semanticizer in teaching new forms in the target language, and as a forum to raise more awareness of the complex linguistic structures. More importantly, translation can generate a large amount of languaging and mutually become improved through languaging. Therefore, in the L2 contexts where students and teachers share similar L1, such as in Japan or Iran, translation can play an effective pedagogical role. Finally, by blending languaging and a variety of form-focused tasks on CMC platforms such as Google Docs, Google Meet, and Zoom, both L2 teachers and learners can enjoy the synchronicity, simplicity, and practicality of their invaluable resources.

The arguments in this research are still inconclusive due to several limitations. The COVID-19 pandemic was the major obstruction that caused countless adjustments to the procedures of selecting participants, collecting data, and setting follow-up discussions with the research team. The second limitation was the non-random method of sampling. The participants were English-major EFL university students at high levels of language proficiency who volunteered to collaborate. The researcher speculated that the participants' high level of task engagement and enthusiasm, advanced language proficiency, and educational background in English Translation Studies could have confounded the findings. Therefore, the generalizability of the results should be done with precautions. From the academic research design perspective, the researcher did not plan to examine the sustainability of the impact made by WL production on writing task performance by running delayed posttests. Neither did she isolate the moderating effect of the translation tasks by in-

cluding comparison groups who could complete other types of form-focused writing tasks. Beyond the limitations in this study, the reported findings reasonably suggest that if WL is carefully designed in online modalities and/or face-to-face context of language learning, it can provide optimal opportunities for L2 writing improvement.

## DECLARATION OF COMPETITING INTEREST

None declared.

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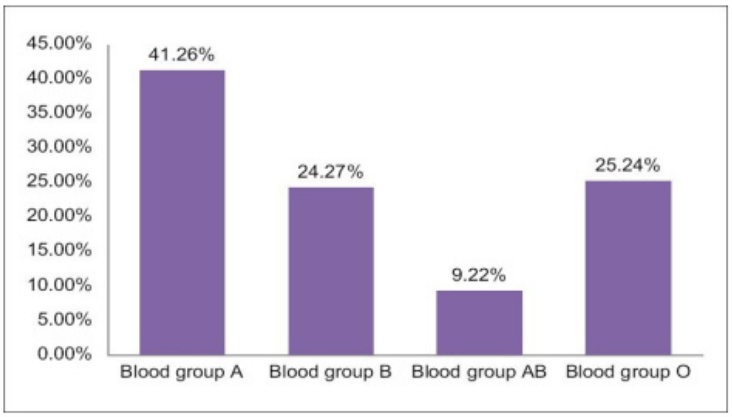
# APPENDIX A

## Error-Identification Task + WL

**COVID-19 and Blood Types**




(Adopted from Al-Kheikani, 2020)

Read the passage and choose the accurate responses by highlighting them. You can write your languaging episodes on the margins.

این نمودار گزارش می دهد که گروههای خونی ABO در حساسیت به COVID-19 نقش دارد. افراد گروه خونی A در مقایسه با گروه خونی O بیشتر در معرض خطر عفونت قرار دارند. درصد گروه های خونی O ، AB، Bو A در کل بیماران تحت بررسی به ترتیب ۲۵/۲٤ ، ۹/۲۲ ، ۲٤/۲۲ و ٤۱/۲٦ است. گروه خونی O در مقایسه با گروه های خونی غیر O با خطر کمتری همراه است. برعکس ، گروه خونی A در مقایسه با گروه های خونی غیر A با خطر بیشتری همراه است.

3. I don't know this word but I guess it means cruelty.

8. percent or parents?

12. I am not sure about this one!

This picture[1] reports that the ABO blood types plays[2] roles in susceptibility[3] to COVID-19. The[4] people with Blood type A has[5] a higher danger[6] of infection compared to[7] Blood type O. The percent[8] of O, AB, B, and A Blood types in the total investigating[9] patients was 25.24, 9.22, 24.27, and 41.26, respectively[10]. Blood type O is associated in[11] a lower risk compared to the non-O Blood types. To[12] the contrary, Blood type A is associated with a higher risk compared to the non-A Blood types.

[1] Correct/Incorrect
[2] Correct/Incorrect
[3] Correct/Incorrect
[4] Correct/Incorrect
[5] Correct/Incorrect
[6] Correct/Incorrect
[7] Correct/Incorrect
[8] Correct/Incorrect
[9] Correct/Incorrect
[10] Correct/Incorrect
[11] Correct/Incorrect
[12] Correct/Incorrect

1. picture or image?
2. –

4. -
5. -
6. danger is correct?

7. compared against.
9. investigated is correct.
10. relatively is correct. respectively? why?

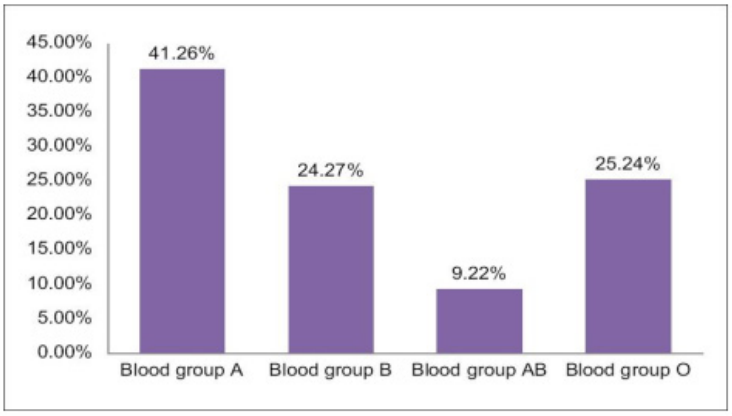
11. -

**The Score: 6/12**

# APPENDIX B

## Gap-filling Task + WL

**COVID-19 and Blood Types**




(Adopted from Al-Kheikani, 2020)

Read the passage and write the best English equivalence in the blanks. You can write your languaging episodes on the margins.

*این نمودار گزارش می دهد که گروههای خونی ABO در حساسیت به COVID-19 نقش دارد. افراد گروه خونی A در مقایسه با گروه خونی O بیشتر در معرض خطر عفونت قرار دارند. درصد گروه های خونی O، AB، B و A در کل بیماران مورد بررسی به ترتیب ۲۵/۲٤ ، ۹/۲۲ ، ۲٤/۲۲ و ٤۱/۲٦ است. گروه خونی O در مقایسه با گروه های غیر O با خطر کمتری همراه است. برعکس ، گروه خونی A در مقایسه با گروه های غیر A با خطر بیشتری همراه است.*

1. I don't remember the exact word! I think it can't be a picture. Pictures don't show information!

2. Take roles or play roles?

3. I am sure it is not the best word but it is close in meaning.

4. –

5. People are in. I think I should write 2 words here.

This *graph* [1] reports that the ABO blood types *play* [2] roles in *sensitiveness* [3] to COVID-19. - [4] people with Blood type A *are in* [5] a higher *danger* [6] of infection compared *to* [7] Blood type O. The *percentage* [8] of O, AB, B, and A Blood types in the total *observed* [9] patients was 25.24, 9.22, 24.27, and 41.26, *in order* [10]. Blood type O is associated *with* [11] a lower risk compared to the non-O Blood types. *On* [12] the contrary, Blood type A is associated with a higher risk compared to the non-A Blood types.

6. I am not sure danger or condition!

7. –

8. Percentages or percentage?

9. I don't know the exact word for it, but patients can't be studied. Or can they? It must be observed.

10. Why it has come at the end of the sentence? It is very confusing!

11. –

12. To or On? I am not sure.

**The Score: 11/12**